

CLAIMS

1. A paste containing:

solids having a conductive substance and a resin;  
and

5 a solvent for dissolving the resin,  
wherein a solids content of said paste is not less  
than 60 vol%.

2. A paste containing:

solids having a conductive substance and a resin;  
10 and

a solvent for dissolving the resin,  
wherein a viscosity ratio of said paste is not  
more than 2.

3. A paste containing:

15 solids having a conductive substance and a resin;  
and

a solvent for dissolving the resin,  
wherein a solids content of said paste is not less  
than 60 vol% and a viscosity ratio thereof is not more  
20 than 2.

4. A connection plug buried in a connection hole  
of a substrate, wherein said connection plug is made of  
a paste which contains powder having different average  
particle sizes, and not less than 10% of said powder  
25 has an average particle size of not less than 3  $\mu$ m.

5. A method of burying said paste defined in  
claim 1 in a trench formed in a major surface of

a substrate.

6. A method of burying said paste defined in claim 2 in a trench formed in a major surface of a substrate.

5 7. A method of burying said paste defined in claim 3 in a trench formed in a major surface of a substrate.

10 8. A method of burying said paste defined in claim 4 in a trench formed in a major surface of a substrate.

15 9. A method of burying powder in a trench formed in a major surface of a substrate by coating a region including the trench with a solution in which the powder disperses and precipitating the powder in the solution.

10. A method according to claim 9, wherein a solution to which a resin is added is used as the solution.

20 11. A method according to claim 9, wherein a portion of said powder is a glass powder.

12. A method according to claim 10, wherein a portion of said powder is a glass powder.

13. A method of manufacturing a semiconductor substrate, comprising the steps of:

25 forming a trench in a major surface of a substrate;

forming a calcination type paste inside and

outside the trench, and burying said paste in the trench;

temporarily hardening said paste;

removing said paste outside the trench; and

5 calcining said paste.

14. A method according to claim 13, wherein said paste outside the trench is removed by one of polishing and etching.

10 15. A method according to claim 13, wherein a connection plug made of said paste extending through the substrate is formed by removing an opposite surface of the substrate to the major until said paste appears after the step of calcining said paste.

16. A method according to claim 13, wherein an 15 interconnection is formed on said paste after the step of calcining said paste.

17. A method according to claim 13, wherein a conductive paste is used as said paste.

20 18. A method according to claim 13, wherein said paste outside the trench is removed by chemical mechanical polishing.

25 19. A method according to claim 13, wherein a connection plug made of said paste extending through the substrate is formed by removing an opposite surface of the substrate to the major by one of polishing and etching until said paste appears after the step of calcining said paste.

20. A method according to claim 13, wherein a connection plug made of said paste extending through the substrate is formed by removing an opposite surface of the substrate to the major by chemical mechanical 5 polishing until said paste appears after the step of calcining said paste.

21. A method of manufacturing a semiconductor device, comprising the steps of:

10 forming a trench in a major surface of a substrate;

burying a calcination type paste in the trench so as to leave a space including at least a portion on a bottom surface of the trench;

15 filling a void in the trench with said paste by making a pressure on said paste outside the trench higher than a pressure on the void in the trench; and 20 removing said paste outside the trench.

22. A method according to claim 21, wherein the void in the trench is filled with said paste by pressurizing said paste outside the trench.

23. A method according to claim 21, wherein after the step of burying said calcination type paste in the trench under a reduced pressure is performed to leave a space including at least a portion of a bottom 25 surface of the trench, the void in the trench is filled with said paste by setting an atmospheric pressure higher than the reduced pressure.

24. A method of manufacturing a semiconductor device, comprising the steps of:

forming a trench in a major surface of a substrate;

5 burying a calcination type paste in the trench so as to leave a space including at least a portion of a bottom surface of the trench;

10 filling a void in the trench with said paste by making a pressure on said paste outside the trench higher than a pressure on the void in the trench; temporarily hardening said paste; removing said paste outside the trench; and calcining said paste.